REMARKS

Claims 1-3, 5-12, 15, 16, 18, 19, 21 and 23-25 are currently pending, with claims 1, 7 and 11 being in independent form. Claims 1, 7 and 11 have been amended. Support for the amendments may be found, for example, in Fig. 1 and at pg. 6, line 26 of the originally filed specification. No new matter has been added. Reconsideration of the application, as amended, is respectfully requested.

The Examiner has failed to indicate Applicant's claim for priority or that the U.S. Patent Office has received the priority documents. A notice indicating Applicant's claim for priority and that the priority document was received is requested.

In the September 28, 2006 Office Action, independent claims 1, 7 and 11, and dependent claims 2, 3, 5, 8-10, 12, 15, 16 and 23-25 were rejected under 35 U.S.C. §103(a) as unpatentable over "Design of Interfaces for TCP/IP Over Wireless," IEEE, 1996 ("*Chaskar*") in view of "Gateways and RFCN (Reverse Feedback Congestion Notification)," IEEE, Feb. 5, 1997 ("*Ziegler*") or U.S. Patent No. 6,438,101 ("*Kalampoukas*"). Claims 6, 18, 19 and 21 were rejected under 35 U.S.C. §103(a) as unpatentable over *Chaskar* or *Ziegler*, and further in view of U.S. Patent No. 6,608,832 ("*Forslow*"). For the following reasons, it is respectfully submitted that all claims of the present application are patentable over the cited references.

Independent claims 1, 7 and 11 have been amended to emphasize the interrelation between a sender, the receiver and the network element. That is, independent claims 1, 7 and 11 have been amended to define that data packets are transmitted from the sender to the receiver through a packet data connection via the network element and a radio part, and that radio conditions of the radio part between the sender and the receiver are detected. The term "radio part" is disclosed, for example, at pg. 6, line 29 of the originally filed specification. In addition, Fig. 1 of the instant specification discloses a RAN (Radio Access Network). No new matter has been added.

The Office Action (pg. 7, ¶ 6) states:

> Chaskar disclose a method and system for (1) detecting transmission conditions comprising buffering conditions of data packets at the network element and radio conditions and modify the window accordingly...

Applicant respectfully asserts *Chaskar* fails to teach or suggest independent claims 1, 7 and 11 as amended. *Chaskar* (Sec. 2.2) teaches that the Tahoe version of TCP is considered to be a dynamic window-based flow control protocol. *Chaskar* is generally directed to interface design,

i.e., the size of a wireless-wireline interface buffer is considered pursuant to designing an interface. *Chaskar* (Abstract; pg. 199, ¶ 2 and 3) teaches conventional dynamic window-based congestion control schemes. *Chaskar* (pg. 201, Sec. 3) further teaches that the channel state is considered pursuant to the analysis that is performed to design the interface. However, *Chaskar* fails to teach or suggest that such an interface modifies header data of acknowledgment messages in accordance with transmission conditions.

In contrast, in accordance with the claimed invention, a network element monitors a window field included in acknowledgment messages sent from a receiver to a sender, and modifies the window field in accordance with radio conditions and the amount of data packets buffered in the network element. In the case of "normal" conditions, the network element allows the receiver to specify a normal window size (see, for example, Fig. 2). Put differently, in the claimed invention, a network element is located between a sender and a receiver, via which data packets transmitted between the sender and the receiver flow are buffered. An intermediate node, such as the interface disclosed in *Chaskar*, does not intercept conventional TCP fields. In the claimed invention, however, the network element recited in 1, 7 and 11 modifies the window field, which enables a reliable, rapid adaptation to conditions that have changed, because of the extra knowledge about such changed conditions that the network element possesses. Thus, the claimed network element is arranged to intervene in the dynamic window-based congestion control scheme performed between the sender and the receiver. *Chaskar* fails to teach or suggest such a claimed network element.

The Examiner acknowledges that *Chaskar* differs from the claimed invention in that *Chaskar* fails to teach a receiver that is arranged to acknowledge each received data packet by an acknowledgment message containing header data. The Examiner cites *Zielger* or *Kalampoukas* in an attempt to cure this deficiency of *Chaskar* (Office Action, pgs. 3 and 5, respectively). However, the combination of *Chaskar* and *Zielger* or *Kalampoukas* fails to teach or suggest the network element of amended independent claims 1, 7 and 11.

Ziegler discloses a Buffer Utilization Control (BUC) algorithm that is executed in a "gateway" (see pg. 410, Abstract). *Ziegler* (pg. 410, Abstract, lines 12-13) discloses a signaling mechanism called Reverse Feedback Congestion Notification (RFCN). *Ziegler* (Abstract, lines 14-15) teaches that RFCN is applicable to transport protocols, such as TCP. *Ziegler* (Abstract, lines 15-17) teaches a receiver transmits its available buffer size to a sender in a window-field in the header of an ACK-header during window flow control. *Zeigler* (Abstract, lines 17-20) teaches that

the BUC algorithm may update the credit value in this window field to its computed window to control the transmission rate of a data-sender. However, the BUC gateway disclosed in *Ziegler* is unable to detect radio conditions. Consequently, the BUC gateway of *Ziegler* fails to intervene in a window-based flow-control scheme, because the scheme disclosed in *Ziegler* is not performed between a data sender and the data receiver shown in Fig. 1 without the BUC gateway. That is, *Ziegler* fails to teach or suggest a "network element [that] is arranged to buffer data packets transmitted from the sender to the receiver and to receive the acknowledgement message transmitted from the receiver to the sender, detect transmission conditions comprising buffering conditions of the data packets at said network element and radio conditions of the radio part between the sender and the receiver, and modify the field indicating the window size included in the acknowledgement message in accordance with the transmission conditions". *Zeigler* thus fails to teach or suggest amended independent claims 1, 7 and 11.

Kalampoukas, on the other hand, teaches a method for controlling congestion in an inter-network having at least one controlled network segment and at least one non-rate-controlled network segment coupled by a router to prevent large queues of packets from accumulating in the router, thereby potentially causing congestion and buffer overflows in the routers (see col. 2, line 63 thru col. 3, line 1). *Kalampoukas* (col. 3, lines 1-5) states, "the window size of connections passing through the routers are controlled based on the congestion level in the routers, so as to control the flow of packets into the internetwork, thereby controlling congestion". *Kalampoukas* (col. 3, lines 5-7) teaches that this results in improved throughput and fairness in the internetwork while minimizing losses due to buffer overflows in the routers. However, *Kalampoukas* fails teach or suggest the network element as recited in amended independent claims 1, 7 and 11.

Kalampoukas (col. 10, lines 24-28; Fig. 6) teaches destination device 125 sends an acknowledge for the packet having byte 21000 with a window size value of, for example, 8000 bytes, in the case where destination communication device 125 successfully receives the data packets with a byte range of 20001-21000. However, there is nothing here to teach or suggest all of the limitations recited in amended independent claims 1, 7 and 11.

Forslow has been cited by the Examiner based on the failure of *Chaskar*, *Ziegler* and *Kalampoukas* to teach or suggest that the " network element comprises an SGSN network element for performing header compression". However, *Forslow* also fails to teach or suggest the network

element arranged in the manner defined by amended independent claims 1, 7 and 11. Consequently, the combination of *Chaskar*, *Ziegler*, *Kalampoukas* and/or *Forslow* fails to render independent claims 1, 7 and 11 obvious and unpatentable and thus, reconsideration and withdrawal of all the rejections under 35 U.S.C. §103(a) are in order, and a notice to that effect is requested.

In view of the patentability of independent claims 1, 7 and 11, for the reasons set forth above, dependent claims 2, 3, 5, 6, 8-10, 12, 15, 16, 18, 19, 21 and 23-25 are all patentable over the prior art.

Based on the foregoing amendments and remarks, this application is in condition for allowance. Early passage of this case to issue is respectfully requested.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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